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The Therapeutic Use of Penicillin in Anicteric Leptospirosis

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Vrachebnoe Delo. 4: 429-431: 1957.

There is extremely little data presented in the literature concerning the question of antibiotic therapy of anicteric leptospirosis. In view of this we consider that our observations merit attention.

From June through October 1955 we observed 252 swamp fever patients who were treated with penicillin while in a rural Rayon hospital. The patients were from 7 to 63 years in age. 45.8% had the acute form of the disease, 52.4% the medium form and 1.8% had the mild form. 62.6% of the patients were hospitalized during the first three days of the disease.

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The start of the disease in all cases was acute and accompanied by a chill. A sharp headache developed with pains in the extremities, the lumbus, the dorsum and at times in the upper abdomen. The temperature during the first 24 hours of the disease reached 39-40°. In 2.5% of the patients skin eruptions of a roseolo-papular character were observed. The rash appeared only until the beginning of the penicillin therapy. After completion of the course, such phenomena were not observed. This gives a basis to assume that the use of penicillin in anicteric leptospirosis guards against skin eruptions.

Icterus of the sclerae was noted in 6.6% of the patients and a pronounced jaundice in 1.8%. Concerning this it should be noted that not one of the patients under our examination during the penicillin treatment period had jaundice.

60% of the patients treated with penicillin were serologically examined in the L'vov Institute of Epidemiology, Microbiology and Hygiene. The lysis-agglutination reaction was administered on the 8th-90th day from the start of the disease and in 90.8% of the cases proved to be positive in dilutions from 1:100-1:200,000. In 9.2% of the cases the lysis-agglutination reaction proved negative.

Three leptospiral blood cultures of the grippo-typhosa type were taken.

We used crystalline penicillin in therapeutic purposes by the following system. Depending upon the gravity and progress of the disease, the first penicillin dose was set at 200-300,000 units. The subsequent shots were of 100,000 units each, given every six hours until a lasting therapeutic effect was achieved.

The positive effect from the penicillin injection sets in immediately. The crisis began within the first 12 to 24 hours in 74% of the cases, and in the next 24 to 48 hours the preparation had aborted the swamp fever disease in 93.6% of the patients. In 6.4% of the cases we observed a lytic decrease

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in temperature. Such results of the penicillin therapy were evaluated by us as being insufficiently effective. They belonged with a course of the disease complicated by leptospiral meningitis.

The continuance of the penicillin therapeutic<sup>action</sup> lasted 1 to 10 days. On an average 1,500,000 units of penicillin per person were used in the treatment. In those cases where the preparation's action told immediately and the temperature critically dropped within the next 24 hours to its norm, the course of treatment lasted from 24 to 72 hours. In a retarded effect the course of treatment was lengthened to 3-5 days. In all cases the decrease of temperature ran parallel with the improvement of the general condition.

Relapses of the disease were observed in 15.5% of the cases. The duration of the recurring temperature waves, as a rule, did not exceed 12 to 24 hours. The second temperature wave continued for 2 to 4 days in only 4 cases. The penicillin decreased the number of relapses by practically half and in several instances curtailed the duration of the subsequent temperature waves. Almost half of the cases suffering relapses were in those patients receiving late treatment and those with complications caused by leptospiral meningitis.

The outcome of the disease in all of the patients examined by us was favorable, as concerned the liquidation of the pathologic process as well as for the restoration of the capacity to work. There were not even complications. Upon release from the hospital the patients were under our observation for three months. The average bed time of the patients treated with penicillin was 6.2 days. The average number of work-capable days lost was 11.3 days.

The antibiotics biomycin and synthomycin were prescribed for two groups (5 persons each) of the patients. No noticeable therapeutic effect was observed from the indicated preparations despite the large doses used.